DEPARTMENT of ENVIRONMENTAL SERVICES Water Division - Watershed Management Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake: BABOOS	IC LAKE	Lake Area (ha):	89.84
Town:	AMHERST	Maximum depth (m):	7.9
County:	Hillsborough	Mean depth (m):	3.0
River Basin:	Merrimack	Volume (m³):	2737500
Latitude:		Relative depth:	0.7
Longitude:	71°34'38" W	Shore configuration:	2.05
Elevation (f	t): 231	Areal water load (m/yr)	: 3.28
Shore length	(m): 6900	Flushing rate (yr^{-1}) :	1.10
Watershed ar		P retention coeff.:	0.73
% watershed	ponded: 1.6	Lake type:	natural

BIOLOGICAL:	4 February 1999	29 July 1998
DOM. PHYTOPLANKTON (% TOTAL) #1	TABELLARIA 50%	OSCILLATORIA 55%
#2	ASTERIONELLA 40%	DICTYOSPHAERIUM 15%
#3	DINOBRYON 5%	ANABAENA 10%
PHYTOPLANKTON ABUNDANCE (units/mL)		
CHLOROPHYLL-A (µg/L)		15.90
DOM. ZOOPLANKTON (% TOTAL) #1	KERATELLA 44%	KERATELLA 27%
#2	KELLICOTTIA 28%	CILIATE SPP 18%
#3		POLYARTHRA 15%
ROTIFERS/LITER	15	152
MICROCRUSTACEA/LITER	3	45
ZOOPLANKTON ABUNDANCE (#/L)	18	246
VASCULAR PLANT ABUNDANCE		Common/Abun
SECCHI DISK TRANSPARENCY (m)		2.6
BOTTOM DISSOLVED OXYGEN (mg/L)	10.3	0.2
BACTERIA (E. coli, #/100 ml) #1		5
#2		3
#3		

SUMMER THERMAL STRATIFICATION:

stratified

Depth of thermocline (m): 3.5 Hypolimnion volume (m^3) : 27300 Anoxic volume (m^3) : 559300

CHEMICAL:	Lake: BABOOSIC LAKE Town: AMHERST					
	4 February 1999		29 July 1998			
DEPTH (m)	2.0	5.0	1.0	4.0	6.0	
pH (units)	6.5	6.6	6.8	6.3	6.3	
A.N.C. (Alkalinity)	10.1	11.7	10.1	10.1	17.8	
NITRATE NITROGEN	0.12	0.09	0.06		0.06	
TOTAL KJELDAHL NITROGEN	0.30	0.50	0.40	0.70	0.50	
TOTAL PHOSPHORUS	0.006	0.008	0.017	0.047	0.030	
CONDUCTIVITY (µmhos/cm)	78.5	82.3	72.4	72.7	83.4	
APPARENT COLOR (cpu)	18	22	42	50	110	
MAGNESIUM			0.90			
CALCIUM			4.4			
SODIUM			7.8			
POTASSIUM			0.76			
CHLORIDE	13	14	12		12	
SULFATE	5	5	3		2	
TN : TP	70	74	27		19	
CALCITE SATURATION INDEX			2.9			

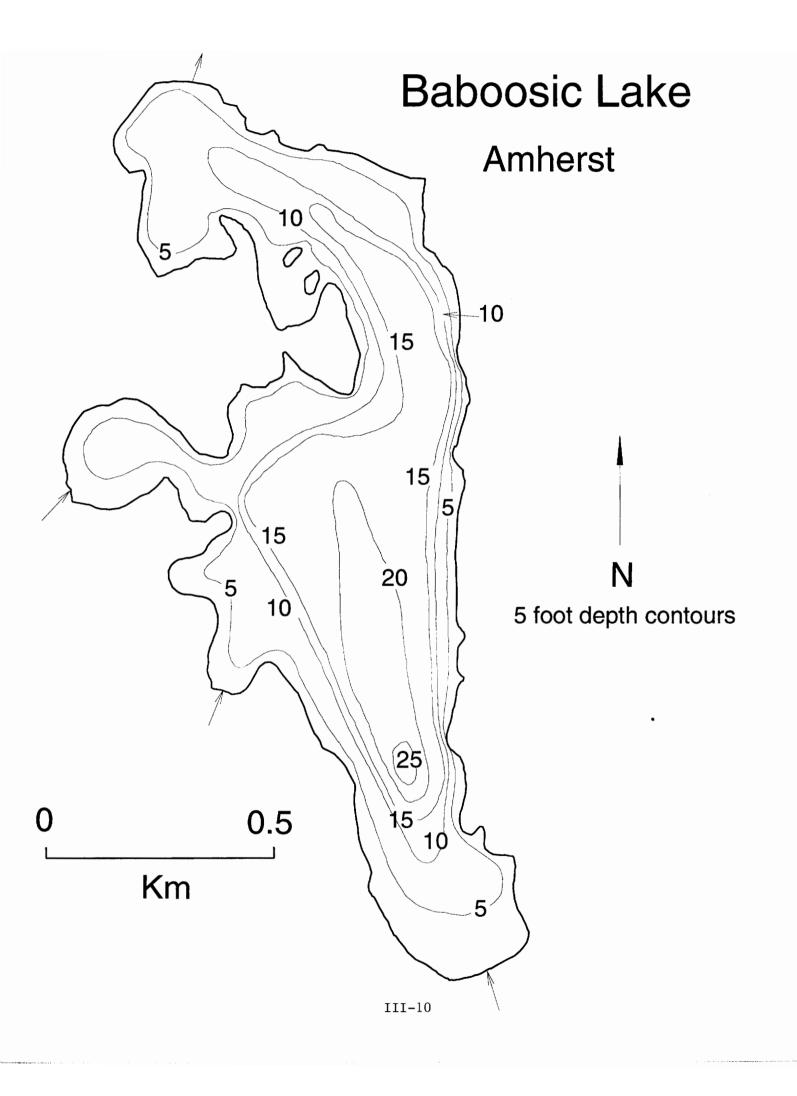
All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 1998

D.O.	s.D.	PLANT	CHL	TOTAL	CLASS
4	3	4	3	14	Eutro.

COMMENTS:

- 1. This pond was previously surveyed and classified in 1977 and 1993 and was rated mesotrophic in both years. In 1998 the chlorophyll value was 4 times the 1977 and 1993 values (3-4 to 16 mg/m³), and the pond moved into the eutrophic class. More frequently-collected data is needed to determine if this is an aberration or a trend. A special diagnostic study of the pond was conducted in 1999 and will provide a more accurate picture of conditions throughout the year.
- 2. Heavily developed shoreline; no public launch site but a town beach was present.
- 3. Over 100 seagulls were observed at the time of the summer sampling.



FIELD DATA SHEET

LAKE: BABOOSIC LAKE

DATE: 07/29/1998

TOWN: AMHERST

WEATHER: HAZY & CLOUDY; BREEZY; 80's

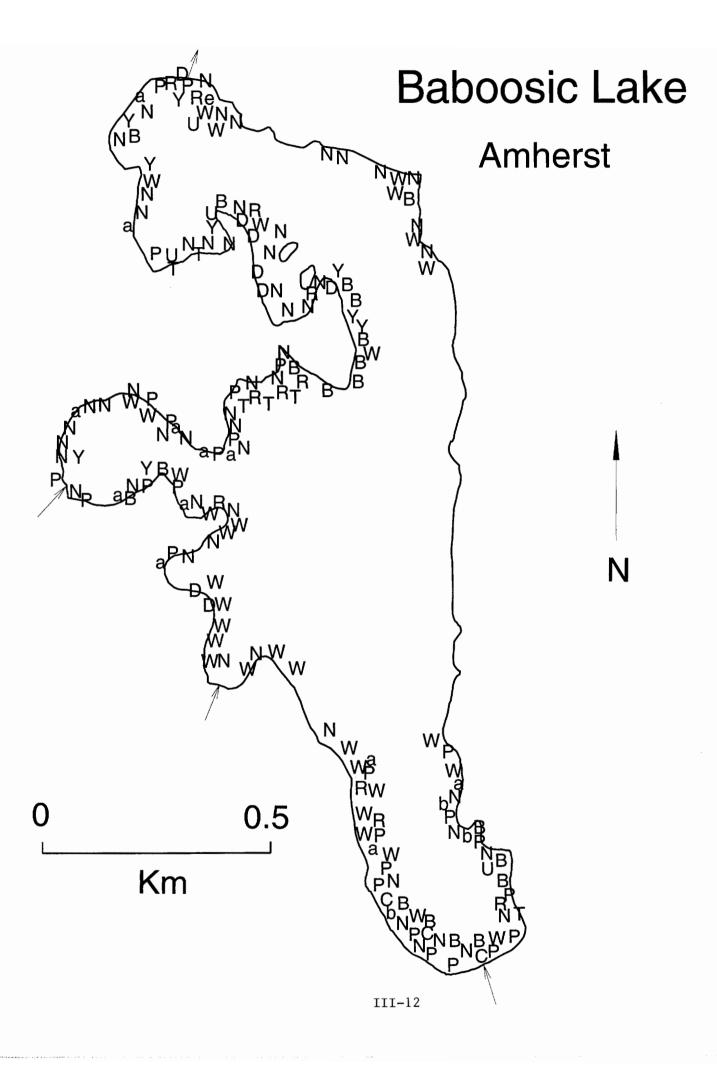
DEP (M		TEMP (°C)	*DISSOLVED OXYGEN	OXYGEN SATURATION
	.1	25.2	7.9	96 %
	.0	25.1	7.8	95 %
	.0	24.7	7.4	90 %
	.0	23.3	2.4	28 %
	.0	19.0	0.1	1 %
	.0	16.9	0.1	1 %
	.0	14.7	0.1	1 %
	.0	13.5	0.2	2 %
		10.20		
	2017			
		- 1		

SECCHI DISK (m): 2.6 COMMENTS:

BOTTOM DEPTH (m): 7.0

TIME: 1130

*Dissolved oxygen values are in mg/L



AQUATIC PLANT SURVEY

LAKE: BABOOSIC LAKE TOWN: AMHERST DATE: 07/29/1998 PLANT NAME Key ABUNDANCE GENERIC COMMON W Potamogeton natans Floating-leaf pondweed Common N Nymphaea White water lily Common/Abun P Pontederia cordata Pickerelweed Common Peltandra virginica Scattered а Arrow arum R Potamogeton robbinsii Scat/Common Robbins pondweed C Cyperaceae Non-flowering sedge Sparse b Scirpus Bulrush Sparse В Brasenia schreberi Water shield Scattered Y Nuphar Yellow water lily Sparse D Decodon verticillatus Swamp loosestrife Scat/Common \mathbf{T} Cattail Scattered Typha U Utricularia Bladderwort Scat/Common Eleocharis Spike rush Sparse e d Dulichium arundinaceum Three-way sedge Sparse

OVERALL ABUNDANCE: Common/Abun

GENERAL OBSERVATIONS:

- 1. Purple loosestrife rings the entire shoreline but is not listed above or depicted on the map.
- 2. Sterile rosettes were observed along much of the bottom.
- 3. Filamentous green algae were common on the bottom throughout the lake.